

CLAIM

We claim:

1. A method of ellipsometrically measuring a test area on a substrate, the method comprising:

- 5 orienting said substrate with respect to an ellipsometer so that an elliptical light spot produced by said ellipsometer fits diagonally within said test area; and
- measuring the surface properties of said test area with said ellipsometer.

10 2. The method of Claim 1, further comprising determining an angle of diagonal of said test area.

15 3. The method of Claim 2, wherein said orienting comprises rotating said substrate by a predetermined angle, so that a major axis of said elliptical light spot is approximately aligned with said angle of diagonal of said test area.

 4. The method of Claim 2, wherein said orienting comprises rotating said ellipsometer by a predetermined angle, so that a major axis of said elliptical light spot is approximately aligned with said angle of diagonal of said test area.

20 5. A method of measuring a test area on a substrate using an elliptical light spot produced by an ellipsometer, the method comprising:

 loading a substrate onto a stage;

 orienting said substrate with respect to said ellipsometer so that said elliptical light spot fits diagonally within said test area;

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producing a light beam with an ellipsometer, said light beam creating said elliptical light spot on said substrate when reflected off of said substrate; and

measuring the surface properties of said test area with said ellipsometer.

5 6. The method of Claim 5, wherein said elliptical light spot comprises a major axis and a minor axis, said major axis of said elliptical light spot being approximately aligned with a diagonal of said test area.

10 7. The method of Claim 5, wherein said sample is loaded onto said stage with the desired orientation.

8. The method of Claim 5, wherein said orienting comprises rotating said substrate by a predetermined angle.

15 9. The method of Claim 5, wherein said orienting comprises rotating said ellipsometer by a predetermined angle.

20 10. The method of Claim 5, further comprising calculating an angle of diagonal for said test area, and orienting said substrate with respect to said ellipsometer by said angle of diagonal.

11. A method of measuring a test area on a substrate using an elliptical light spot produced by an ellipsometer, wherein said elliptical light spot has a major axis and a minor axis, the method comprising:

loading a substrate onto a stage;

orienting said substrate with respect to said ellipsometer, so that said major axis of said elliptical light spot is approximately aligned with a diagonal of said test area;

producing a light beam with an ellipsometer, said light beam creating said
5 elliptical light spot on said substrate when reflected off of said substrate; and

measuring the surface properties of said test area with said ellipsometer.

12. The method of Claim 11, wherein said orienting comprises rotating said substrate by a predetermined angle.

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13. The method of Claim 11, wherein said orienting comprises rotating said ellipsometer by a predetermined angle.

14. The method of Claim 11, further comprising calculating an angle of said diagonal,
15 and orienting said substrate with respect to said ellipsometer by said angle of said diagonal.